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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,197	03/31/2004	Charles S. Desilets	021356-000320US	7506
20350	7590	06/23/2005		
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834				
			EXAMINER JUNG, WILLIAM C	
			ART UNIT 3737	PAPER NUMBER

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/816,197	DESILETS ET AL.	
	Examiner	Art Unit	
	William Jung	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed March 25, 2005 have been fully considered but they are not persuasive.

After careful consideration of claims 1-12 with respect to response, Examiner respectfully disagrees with the applicant.

Regarding claims 1 and 10: The applicant asserts that the "Vortex transducer" refers to convention name of the transducer to specific structure (response page 2). However, on specification page 8, lines 7-12, states that the irregular shape (or in the applicant's figures show discontinuity) transducer is used to create vortex effect. Therefore, the applicant's argument based on the fact above indicates that the vortex transducer produces vortex effect and since the applicant is silent as to specific structure of the vortex transducer in the claims, the resultant vortex from Levin et al's ultrasound transducer anticipates all aspects of the claims. Furthermore, the applicant erroneously asserts that Levin et al's device is an ultrasound transmission device not a transducer. Examiner would like to direct the applicant to review col. 6, lines 9-12 where Levin et al explicitly disclose transducer. The applicant also asserts that Levin et al's device is a catheter. However, a catheter with ultrasound transducer as Levin et al clearly teach is an ultrasound transducer.

Regarding claims 2-6, 7-9, 11, and 12: The applicant argues the relevance of applying Dias et al with Levin et al. Levin et al disclose ultrasound transducer to produce vortex but silent as to the structure of the transducer material. In ultrasound transducer art, it is well known to use PZT, matching layers, backing materials, etc. to construct ultrasound transducer as taught by

Dias et al. It is not important whether it is done on catheter, Dias et al's teaching happens to apply the transducer material to a catheter.

Therefore, the rejection from office action dated February 24, 2005 stands and repeated below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by *Levin et al* (US 6,241,703).

Levin et al anticipate all claimed features in claims 1 and 10. Levin et al disclose a system for producing vortex ultrasound focal field comprising a mechanically formed ultrasound transducer that has irregular shape to produce mechanical vortex where the ultrasound transmission achieves focusing on treatment (col. 25, lines 1-12; col. 7, lines 1-17; figure 49A). The shape of the transducer is irregular so that the resulting ultrasound causes vortex.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Levin et al* as applied to claim 1 above, and further in view of *Dias et al* (US 5,400,788).

Levin et al substantially disclose all claimed features in claims 2-6. However, Levin et al remains silent as to detailed structure of the ultrasound transducer. In ultrasound transducer art it is well known ultrasound transducer described by Levin et al includes transducer with a solid piezoelectric material, composite piezoelectric material with one or more matching layers and backing material for the back of the transducer as evident by a typical ultrasound transducer by Dias et al (col. 6, lines 13–65). Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply Dias et al's teaching of ultrasound transducer structure to Levin et al.

6. Claims 7-9, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Levin et al* in view of *Dias et al*.

Levin et al anticipate all claimed features in claims 1 and 10. Levin et al disclose a system for producing vortex ultrasound focal field comprising a mechanically formed ultrasound transducer that has irregular shape to produce mechanical vortex where the ultrasound transmission achieves focusing on treatment (col. 25, lines 1-12; col. 7, lines 1-17; figure 49A). The shape of the transducer is irregular so that the resulting ultrasound causes vortex. However, Levin et al remains silent as to detailed structure of the ultrasound transducer. In ultrasound transducer art it is well known ultrasound transducer described by Levin et al includes transducer with PZT elements suspended in a polymer or epoxy layer where the figures 1-3 illustrates transducer with liquid state and fixed solid state in figure 4. In addition, Dias et al illustrate in figure 8 where the transducer structure is segmented, i.e. diced. Therefore, it would have been

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obvious to one having an ordinary skill in the art at the time the invention was made to apply Dias et al's teaching of ultrasound transducer structure to Levin et al.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung, Ph.D. whose telephone number is 571-272-4739. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WLS
June 12, 2005


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SUPERVISORY PATENT EXAMINER
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